AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for providing committed access rate (CAR), comprising:

classifying each received packet in an IP(Internet Protocol)/Ethernet network into one of a plurality of quality of service (QoS) groups using information in a header of the packet;

measuring and checking a traffic rate profile of the received packet against a corresponding service level agreement (SLA),

marking the packet as one of an in profile packet or ~~and~~ an out of profile packet, a CAR packet is an in profile packet if the CAR packet is within the corresponding SLA so that the CAR packet receives congestion-free service and wherein a CAR packet is marked as an out of profile packet if the CAR packet exceeds the SLA and is transmitted with best effort service without automatically dropping the out of profile packet; ~~and~~

performing packet buffer memory reservation to guarantee memory space for in profile CAR packets; and

dynamically allocating non-CAR packets to packet buffer memory during non-congestion and if space in the packet buffer memory is available and not allocating non-CAR.

2. (Original) The method of claim 1, wherein said classifying of the packet is performed by a control pipe via a content addressable memory (CAM).

3. (Original) The method of claim 2, wherein said CAM comprises a multi-bank ternary CAM (T-CAM) to provide packet classification.

4. (Original) The method of claim 1, wherein said measuring and checking is via a token bucket model token.

5. (Original) The method of claim 1, wherein said measuring and checking is realized in hardware.

Claim 6 (Cancelled)

7. (Original) The method of claim 1, wherein said measuring and checking facilitates in controlling CAR packets, input rate limiting (IRL) packets and output rate limiting (ORL) packets.

8. (Original) The method of claim 7, wherein IRL and ORL in profile packets receive best effort service and wherein IRL and ORL out of profile packets are dropped.

9. (Original) The method of claim 1, wherein said performing buffer memory reservation is via static memory reservation wherein memory space is statically partitioned between CAR packets and non-CAR packets.

10. (Currently Amended) The method of claim 1, wherein said performing buffer memory reservation is via dynamic memory reservation, ~~wherein packet buffer memory for non-CAR packets is dynamically allocated, and~~ wherein a push-out head-drop mechanism is employed for non-CAR packets to drop the oldest non-CAR packets.

11. (Original) The method of claim 1, wherein a separate multicast queue and a separate multicast threshold are defined for multicast packets, and wherein a multicast counter facilitates in tracking multicast packets.

12. (Previously Presented) A network device for providing committed access rate (CAR), comprising:

a control pipe configured to classify each received packet in an IP/Ethernet network into one of a plurality of quality of service (QoS) groups using information in a header of the packet, the control pipe being further configured to measure and check a traffic transmission rate profile of the received packet against a corresponding service level agreement (SLA), to mark the packet

as one of an in profile packet and an out of profile packet, and to perform packet buffer memory reservation to guarantee memory space for in profile CAR packets and to transmit best effort service for out of profile CAR packets without automatically dropping the out of profile CAR packets;

a transmit queue in communication with the control pipe; and

a packet buffer memory in communication with the transmit queue and configured to receive and store received packets comprising dynamically allocated non-CAR packets received during non congestion and if the packet buffer memory space is available,

wherein buffer memory reservation is via dynamic memory reservation in which packet buffer memory is dynamically allocated for non-CAR packets.

13. (Original) The network device of claim 12, wherein the classification of the packets by the control pipe is performed via a content addressable memory (CAM).

14. (Original) The network device of claim 13, wherein the CAM comprises a multi-bank ternary CAM (T-CAM) to provide packet classification.

15. (Original) The network device of claim 12, wherein control pipe employs a token bucket model to measure and check the traffic transmission rate profile of the received packet, the token bucket model facilitates in controlling CAR packets, input rate limiting (IRL) packets and output rate limiting (ORL) packets.

16. (Original) The network device of claim 15, wherein the token bucket model is realized in hardware.

17. (Original) The network device of claim 15, wherein IRL and ORL in profile packets receive best effort service and wherein IRL and ORL out of profile packets are dropped.

18. (Original) The network device of claim 12, wherein a CAR packet is an in profile packet if the CAR packet is within the corresponding SLA so that the CAR packet receives congestion-free service and wherein a CAR packet is marked as an out of profile packet if the CAR packet exceeds the SLA and is one of provided with best effort service and dropped.

19. (Original) The network device of claim 12, wherein buffer memory reservation is via static memory reservation in which memory space is statically partitioned between CAR packets and non-CAR packets.

20. (Currently Amended) The network device of claim 12, ~~wherein buffer memory reservation is via dynamic memory reservation in which packet buffer memory is dynamically allocated for non-CAR packets, and~~ wherein a push-out head-drop mechanism is employed for non-CAR packets to drop the oldest non-CAR packets.

21. (Original) The network device of claim 12, wherein a separate multicast queue and a separate multicast threshold are defined for multicast packets, and wherein a multicast counter facilitates in tracking multicast packets.

22. (Currently Amended) A method for providing committed access rate (CAR) in a communications network, comprising:

classifying each received packet into one of a plurality of quality of service (QoS) groups using information in a header of the packet;

for a multicast packet, measuring and checking a multicast traffic rate profile of the received multicast packet using a corresponding multicast packet counter, for a CAR packet, measuring and checking a traffic rate profile of the received CAR packet against a corresponding service level agreement (SLA), marking each CAR and multicast packet as one of an in profile packet and an out of profile packet;

for each in profile packet, pushing out a queued non-CAR packet during congestion using a push-out head-drop mechanism to drop the oldest non-CAR packets if at least one of corresponding packet buffer memory or ~~and~~ transmit queue is full;

transmitting the out of profile packets using best effort service without automatically dropping the out of profile packets; and

queuing CAR packet into transmit queue memory.

Claim 23 (Cancelled)

24. (Original) The method of claim 22, further comprising marking and queuing an out of profile CAR packet as a non-CAR packet.

25. (Previously Presented) The method of claim 1, wherein said classifying of the packet is performed by a control pipe via a content addressable memory (CAM),

wherein the CAM comprises a multi-bank ternary CAM (T-CAM) to provide packet classification,

wherein said measuring and checking facilitates in controlling CAR packets, input rate limiting (IRL) packets and output rate limiting (ORL) packets,

wherein IRL and ORL in profile packets receive best effort service and wherein IRL and ORL out of profile packets are dropped.

26. (Previously Presented) The network device of claim 12, wherein the classification of the packets by the control pipe is performed via a content addressable memory (CAM),

wherein the CAM comprises a multi-bank ternary CAM (T-CAM) to provide packet classification,

wherein control pipe employs a token bucket model to measure and check the traffic transmission rate profile of the received packet, the token bucket model facilitates in controlling CAR packets, input rate limiting (IRL) packets and output rate limiting (ORL) packets,

wherein IRL and ORL in profile packets receive best effort service and wherein IRL and ORL out of profile packets are dropped.